What is claimed is:

1. A method for calibrating the gain of a position error signal (PES) calculated from head-positioning servo information read by a disk drive read head in the tracks of the disk, the method comprising:

(a) positioning the head to a track on the disk;

(b) sampling the servo positioning information from the rotating disk;

(c) calculating a PES value for each sample using a gain value;

(d) calculating the kurtosis for the calculated PES values; and

(e) adjusting the gain value in response to the calculated kurtosis.

2. The method of claim 1 wherein adjusting the gain value comprises associating the adjusted gain value with the track on which the head was positioned, and further comprising positioning the head to additional tracks and repeating steps (b) through (e) for each said additional track.

3. The method of claim 2 wherein the tracks on the disk are grouped into radially-spaced zones and wherein positioning the head to additional tracks comprises positioning the head to at least one track in each zone.

4. The method of claim 1 wherein steps (a) through (d) are performed with the head positioned at the positive one-quarter-track position and again with the head positioned at the negative one-quarter-track position.

5. The method of claim 4 wherein step (e) comprises adjusting the gain value in response to the calculated kurtosis having the greater absolute value.

6. The method of claim 4 wherein step (e) comprises adjusting the gain value in response to the absolute value of the average of the two calculated kurtosis values.

7. The method of claim 1 wherein the disk drive contains multiple heads and disks with each head being associated with a respective disk surface, and wherein adjusting the gain value comprises associating the adjusted gain value with the head that read the servo positioning information during the sampling, and further comprising repeating steps (a) through (e) for each head.

8. The method of claim 1 wherein the servo positioning information is located in angularly-spaced servo sectors in the tracks and wherein calculating a PES value for each sample comprises calculating a PES value for each servo sector.

9. The method of claim 1 wherein adjusting the gain value in response to the calculated kurtosis comprises:

repeating steps (b) through (d) using different gain values;

selecting the gain value resulting in the calculated kurtosis having the lowest absolute value; and

storing the selected gain value in the disk drive.

10. The method of claim 1 wherein adjusting the gain value in response to the calculated kurtosis comprises:

adjusting the gain value if the kurtosis exceeds a specified value;

repeating steps (b) through (d) with the adjusted gain value; and

storing the most recent gain value in the disk drive if the kurtosis does not exceed a specified value.

11. The method of claim 10 wherein adjusting the gain if the kurtosis exceeds a specified value comprises reducing the gain if the sign of the kurtosis is positive and increasing the gain if the sign of the kurtosis is negative.

12. A method for calibrating the stitching gain of a position error signal (PES) calculated in a disk drive from servo positioning information read by a disk drive read head, the disk drive having a plurality of read heads and a plurality of associated disk surfaces with generally concentric tracks having angularly-spaced servo sectors containing bursts of head-positioning servo information in a quadrature servo pattern, the calculated PES being a P-PES for a first region of the track width and a Q-PES for a second region of the track width and wherein a stitching gain compensates for discontinuities between the P-PES and Q-PES near the overlap of said track width regions, the method comprising:

(a) positioning a head to near an overlap in a track on the disk;

(b) sampling the servo sectors as the disk rotates;

(c) calculating a P-PES value and a Q-PES value for each sample using a gain value;

(d) selecting either the calculated P-PES value or the calculated Q-PES value for each sample as the PES value for each sample;

(d) calculating the kurtosis for the selected PES values at the overlap positions;

either (e) decreasing the gain value if the kurtosis is positive and its absolute value exceeds a specified value; or (f) increasing the gain value if the kurtosis is negative and its absolute value exceeds a specified value;

(g) repeating steps (b) through (f) with the increased or decreased gain value;

(h) storing in the disk drive, for the head and track, the most recent gain value if the absolute value of the kurtosis does not exceed a specified value; and

(i) repeating steps (a) through (h) for a different track.

13. The method of claim 12 further comprising repeating steps (a) through (i) for each head.

14. The method of claim 12 wherein the tracks on each disk surface are grouped into radially-spaced zones and wherein positioning the head in a track comprises positioning the head in at least one track in each zone.

15. The method of claim 14 further comprising repeating steps (a) through (i) for each head.

16. The method of claim 12 wherein the overlap is at approximately the positive one-quarter-track and negative one-quarter-track positions and wherein steps (a) through (d) are performed with the head positioned at the positive one-quarter-track position and again with the head positioned at the negative one-quarter-track position.

17. The method of claim 16 wherein calculating the kurtosis comprises selecting the kurtosis value having the greater absolute value from the kurtosis values calculated at the positive and negative one-quarter-track positions.

18. The method of claim 16 wherein calculating the kurtosis comprises calculating the average of the kurtosis values calculated at the positive and negative one-quarter-track positions.

19. A method for calibrating the stitching gain of a position error signal (PES) calculated in a disk drive from servo positioning information read by a disk drive read head, the disk drive having a plurality of read heads and a plurality of associated disk surfaces with generally concentric tracks having angularly-spaced servo sectors containing bursts of head-positioning servo information in a quadrature servo pattern, the calculated PES being a P-PES for a first region of the track width and a Q-PES for a second region of the track width and wherein a stitching gain is required to compensate for discontinuities between the P-PES and Q-PES near the positive one-quarter-track and negative one-quarter-track positions, the method comprising:

(a) positioning a head to near a positive one-quarter-track position in a track on the disk;

(b) sampling the servo sectors as the disk rotates;

(c) calculating a P-PES value and a Q-PES value for each sample using a gain value selected from a set of gain values;

(d) selecting either the calculated P-PES value or the calculated Q-PES value for each sample as the PES value for each sample;

(e) calculating the kurtosis for the selected PES values;

(f) repeating steps (b) through (e) with the head positioned near a negative one-quarter-track position in the track;

(g) associating the selected gain value with the kurtosis having the greater absolute value;

(h) repeating steps (a) through (g) for each gain value in the set, whereby each gain value in the set is associated with a kurtosis value in a set of kurtosis values; and

(i) storing in the disk drive, for the head and track, the gain value associated with the kurtosis having the lowest absolute value in the set of kurtosis values; and

(j) repeating steps (a) through (i) for a different track.

20. The method of claim 19 further comprising repeating steps (a) through (j) for each head.

21. The method of claim 19 wherein the tracks on each disk surface are grouped into radially-spaced zones and wherein positioning the head in a track comprises positioning the head in at least one track in each zone.

22. The method of claim 21 further comprising repeating steps (a) through (j) for each head.